1. A method of assembling a tissue engineered construct, comprising:

transfecting a plurality of mammalian cells with a gene for a growth factor

2. The method of claim 1, further comprising culturing the cells until they synthesize a desired amount of extracellular matrix.

3. The method of claim 1, further comprising seeding the cells onto a biocompatible matrix.

4. The method of claim 3, wherein the matrix comprises a member of a synthetic or a non-synthetic material.

5. The method of claim 4, wherein the matrix comprises a member of poly(glycolic acid), collagen-glycosaminoglycan, collagen, poly(lactic acid), poly(lactic-co-glycolic acid, poly(anhydride), poly(hydroxy acid), poly(orthoester), poly(propylfumerate), polysaccharide, polypyrrole, polyaniline, polythiophene, polystyrene, polyester, polyurethane, polyurea, poly(ethylene vinyl acetate), polypropylene, polymethacrylate, polyethylene, poly(ethylene oxide), poly(carbonate), and any combination thereof.

6. The method of claim 5, wherein the synthetic matrix comprises poly(glycolic acid).

7. The method of claim 1, wherein the cells are human cells.

8. The method of claim 1, wherein the cells are selected from chondrocytes, hepatocytes, Islet cells, nerve cells, muscle cells, bone forming cells, fibroblasts, endothelial cells, stem cells, connective tissue stem cells, mesodermal stem cells, and epithelial cells.

9. The method of claim 8, wherein the cells are chondrocytes.

10. The method of claim 1, further comprising adding a cell attachment facilitator to the matrix, wherein the cell attachment facilitator comprises a member of integrins, cell adhesion sequences, basement membrane components, agar, and collagen.

11. The method of claim 1, further comprising adding a cell metabolism regulator to the matrix.

12. The method of claim 1, wherein the growth factor is a protein.

13. The method of claim 12, wherein the growth factor is selected from TGF-β, TGF-α, acidic fibroblast growth factor, basic fibroblast growth factor, epidermal growth factor, IGF-I and II, vascular endothelial-derived growth factor, bone morphogenetic proteins, hepatocyte, platelet-derived growth factor, heparin binding growth factor, hematopoetic growth factor, and peptide growth factor.

14. The method of claim 13, wherein the growth factor is insulin-like growth factor I.

15. The method of claim 1, wherein transfection is accomplished without a viral vector.

16. The method of claim 15, wherein transfection comprises use of a lipid-based delivery system.

17. The method of claim 1, wherein transfection is accomplished with a viral vector.

18. A tissue engineered construct, comprising:

a mammalian cell transfected with a gene for a growth factor; and

a biocompatible synthetic matrix.

19. The tissue engineered construct of claim 18, wherein the cell is a chondrocyte.

20. The tissue engineered construct of claim 18, wherein the synthetic matrix comprises poly(glycolic acid).

21. The tissue engineered construct of claim 18, wherein the growth factor is insulin-like growth factor I.

22. A method of facilitating regeneration of cartilage, comprising:

transfecting a chondrocyte with a gene for a growth factor;

seeding the cell onto a biocompatible synthetic matrix;

implanting the cell-seeded matrix into an *in vivo* site.

23. The method of claim 22, wherein the synthetic matrix comprises poly(glycolic acid).

24. The method of claim 22, wherein the growth factor is insulin-like growth factor I.

25. The method of claim 22, wherein transfection is accomplished without a viral vector.

26. The method of claim 25, wherein transfection comprises use of a lipid based delivery system.

27. A transfection vector for a mammalian cell, comprising a gene for a growth factor.

28. The transfection vectors of claim 27, wherein the cell is selected from chondrocytes, hepatocytes, Islet cells, nerve cells, muscle cells, bone forming cells, fibroblasts, endothelial cells, stem cells, connective tissue stem cells, mesodermal stem cells, and epithelial cells.

29. The transfection vector of claim 27, wherein the growth factor is a protein.

30. The transfection vector of claim 29, wherein the growth factor is selected from TGF-β, TGF-α, acidic fibroblast growth factor, basic fibroblast growth factor, epidermal growth factor, IGF-I and II, vascular endothelial-derived growth factor, bone morphogenetic proteins, hepatocyte, platelet-derived growth factor, heparin binding growth factor, hematopoetic growth factor, and peptide growth factor.

31. The transfection vector of claim 30, wherein the growth factor is insulin-like growth factor I.

32. The transfection vector of claim 31, wherein the gene comprises human IGF-I expression vector pCMVhIGF-I.

33. The transfection vector of claim 31, wherein the gene comprises an active fragment that is 50% homologus to the complete gene for IGF-I.

34. The transfection vector of claim 33, wherein the gene comprises an active fragment that is 75% homologus to the complete gene for IGF-I.

35. The transfection vector of claim 34, wherein the gene comprises an active fragment that is 90% homologus to the complete gene for IGF-I.

36. The transfection vector of claim 31, wherein the transfected gene codes for a portion of normal IGF-I that is 50% homologus to complete.

37. The transfection vector of claim 36, wherein the transfected gene codes for a portion of normal IGF-I that is 75% homologus to complete IGF-I.

38. The transfection vector of claim 37, wherein the transfected gene codes for a portion of normal IGF-I that is 90% homologus to complete IGF-I.

39. A plurality of transfected cells comprising chondrocytes, wherein the chondrocytes are transfected with a gene for a protein.

40. A plurality of cells of claim 39, wherein the protein is a growth factor.

41. The plurality of cells of claim 40, wherein the growth factor is insulin like growth factor I.

42. The plurality of cells of claim 41, wherein the cells are transfected with a vector pCMVhIGF-I.